

DRAFT

INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
FIELD SAMPLING PLAN

EG&G ROCKY FLATS PLANT

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

ENVIRONMENTAL MANAGEMENT

OCTOBER 11, 1993

ADMIN RECORD

A-DU08-000179

IAEE FIELD SAMPLING PLAN

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Field Sampling Plan - IAEE
1.0, Rev. 0
1 of 8
10/12/93
Environmental Management

Approved By:

TITLE:

Industrial Area Environmental Evaluation

Name

(Date)

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1.0 INTRODUCTION

This Field Sampling Plan (FSP) addresses the specific field investigation requirements for the Industrial Area Environmental Evaluation (IAEE) at the Rocky Flats Plant (RFP). The proposed field investigations consist of Task Three of Phase I of the IAEE. The field investigations for the IAEE have been planned in recognition of the limited extent of ecological systems within the Industrial Area (IA). The following sections address the Site Background, Data Quality Objectives, and Field Investigations.

2.0 SITE BACKGROUND

The IAEE field investigations will be performed to determine the ecological effects of exposure to contaminants. The IA includes Operable Units (OUs) 8, 9, 10, 12, 13, and 14. Data already generated from OUs 4 and 6 will be incorporated in the IAEE. These OU locations and corresponding Industrial Hazardous Substance Site (IHSS) locations are shown in Figure 1. The OUs cover a large portion of buildings and surrounding ground at the RFP site. Data from the field investigations will be used to determine the general site characteristics and ecological setting of this highly developed area of the RFP. The general approach for the IAEE was initially developed in the Environmental Evaluation (EE) Technical Memorandum, Addendum to Final Phase I RFI/RI Work Plan for OU9 (DOE, 1992). Further refinements were developed in EE work performed at OU4 and have been incorporated in this FSP. Specific sites to be surveyed within the IA were identified through a site reconnaissance survey conducted on October 7, 1993.

Field investigation activities will include the following:

- Confirmation of habitats and vegetation mapping units involved in the IA;
- Descriptive, qualitative surveys of habitats and plant and animal communities for information and data input into the Conceptual Model to be developed in Task Two of Phase I; and
- Determination of the presence of habitats for potential target taxa, including song birds, raptors, mammals, threatened and endangered species, or other species of concern.

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The field procedures to be used in the field investigations will follow RFP Standard Operating Procedures Manual Volume V: Ecology (EG&G 1992). During Phase I of the IAEE only qualitative ecological field data will be collected. No quantitative procedures will be used to estimate population densities or production of key species. In addition, no tissue samples will be collected, and no toxicity testing or histopathological assessments will be conducted.

Other IAEE tasks including the determination of Chemicals of Concern (COCs), development of the Conceptual Release and Transport Model, toxicity and contamination assessment are not addressed as part of this FSP.

3.0 DATA QUALITY OBJECTIVES (DQOs)

The DQO process for the IAEE follows that recommended by the Environmental Protection Agency (EPA, 1987 and EPA, 1990), and involves the preparation of statements that define data requirements and data uses. Three primary objectives relating to data requirements apply to the IAEE FSP:

- Describe the ecological setting of the IA;
- Identify key plant and animal species; and
- Collect data for the development of a Conceptual Model.

Table 1 summarizes each major objective with corresponding data requirements, data types, survey activities, and data use. Data collection will be limited to surveys. No physical samples will be taken. All activities will generate "qualitative", rather than "quantitative" data. "Qualitative" refers to the use of general observation and estimation of parameters of a population based on representative samples. "Quantitative" infers comprehensive empirical measurement and assessment of all samples of a population. Qualitative estimation provides an acceptable level of accuracy when applied by qualified senior personnel experienced with the site.

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TABLE 1
INDUSTRIAL AREA ENVIRONMENTAL EVALUATION
DATA QUALITY OBJECTIVES

Specific Objective	Data Type	Survey Activity	Data Use
1. Describe Ecological Setting of the IA	Vegetation	Releve Plot Estimation/ Observation	Conceptual Model Risk Analysis
	Small Mammals	Trapping/Observation/ Description	Conceptual Model Risk Analysis
	Habitat	Observation/Mapping/ Description	Conceptual Model Risk Analysis
2. Identify Key Plant and Animal Species	Vegetation	Observation/Releve Plot Estimation	Conceptual Model Risk Analysis
	Small Mammals	Observation/Trapping	Conceptual Model Risk Analysis
3. Collect Data for Conceptual Model	Raptors, Reptiles, Other Wildlife	Observation/Description	Conceptual Model
	Large Mammals	Observation/Description	Conceptual Model
	Feeding Patterns	Observation/Description	Conceptual Model

The data collected will be used to identify site-specific receptor species and to construct a conceptual release and transport model based on an IA trophic level scheme. The ultimate use is to evaluate actual and potential risks to plant and animal species in and around the Industrial Area. If ecotoxicological investigations are warranted based on this phased study, then additional DQOs will be developed as the IAEE continues.

4.0 FIELD INVESTIGATIONS

A site reconnaissance survey was conducted on October 7, 1993. The number and extent of areas with sufficient vegetation communities and associated habitats for surveying were noted. A total of four study areas were identified. Two principal study areas with functional vegetation communities were identified along two main drainages to the east and northeast of the IA. Two

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locations with minor habitat development were also observed. One consists of ponds to the north of Building 700 complex and another consists of a narrow drainage in the southcentral portion of the IA along the railroad tracks in the 400 Building area.

The four study areas are shown in Figures 2 through 5. These areas include:

<u>Area</u>	<u>Figure</u>
East Drainage Area	2
North Pond & Seep	3
Northwest Drainage	4
West Railroad	5

Locations for proposed surveying are shown for each study area in Figures 2 through 5.

Throughout the IA a weedy vegetation type exists that will be characterized but not mapped. Some areas of the IA have been landscaped with tree plantings and sod. These will be noted and characterized but not qualitatively evaluated. The primary tasks for this FSP consist of typing and describing general habitats with respect to condition and extent, and qualitatively describing the corresponding vegetation and wildlife components. These tasks are described in the following sections.

4.1 HABITAT SURVEYS

The habitat types within the IA will be determined and mapped, then described for present conditions and extent, according to SOP EE.11. The principal plant and animal species in each habitat will be noted, and the potential for threatened and endangered species will be evaluated. Buildings, parking lots, and roads cover much of the IA, and these will not be mapped into habitats. The aquatic habitat is extremely limited in the IA and consists of managed seeps around buildings and surface discharge along earthen drainage ways. Aquatic habitats will be located, qualitatively evaluated, but not surveyed.

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4.2 VEGETATION SURVEYS

Vegetation surveys will be performed qualitatively to provide data on plant community composition. Qualitative assessment techniques to describe vegetation characteristics will consist of approximately of 15 releve plots located in the Northwest and East Drainage study areas and 5 releve plots each in the North Pond and Seep Area and the West Railroad Area.

The survey objectives include the identification of the principal primary producer species and the potential for protected species occurrence. The vegetation will be identified according to community type and correlated to the habitat nomenclature and descriptions in the SOP EE.11. Lists of species and principal abiotic features will be observed and noted for each area and habitat type. Much of the vegetation in the IA occurs in reclaimed areas or has been disturbed by construction and operation of the RFP. This vegetation is heterogenous in composition and variable, with no natural vegetation communities present.

4.3 WILDLIFE SURVEYS

Wildlife surveys will be conducted to gather qualitative data on wildlife species within the IA. The objectives of the wildlife surveys are to: (1) describe existing wildlife habitats; (2) identify potential transport pathways through trophic levels; (3) identify key species; (4) identify protected species and habitats, if present; and (5) develop a conceptual food web model.

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Song birds, small mammals, and larger predators may use the area daily, seasonally or sporadically, or wander through as vagrants. The wildlife survey will document the presence of terrestrial species and provide information to describe and delineate habitats. Five major activities will be performed during the wildlife surveys:

- Live trapping to assess small mammal populations, using SOP EE.06, with the following numbers of traps:
 - East Drainage: 50 Traps
 - North Pond & Seep: 10 Traps
 - Northwest Drainage: 15 Traps
 - West Railroad: 25 Traps
- Qualitative song bird transects to record all species observed and their behavior and numbers according to SOP EE.07;
- Wildlife use records of the habitats by identification of animal trace and by observation, relying on vocalizations, scat identification, burrows, runs, remains, and direct observation;
- Wildlife species use linkage to identified and delineated habitat types using SOP EE.11; and
- Evaluation of the presence or potential for threatened and endangered wildlife species and species and habitats of concern.

All observations and field data, including notes will be recorded in appropriate field forms found in the RFP Ecology SOPs.

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5.0 REFERENCES

DOE, 1992. Environmental Evaluation Technical Memorandum Addendum to Final Phase I RFI/RI Work Plan. Rocky Flats Plant Original Process Waste Lines. Operable Unit No. 9, June 1992.

EG&G, 1992. Standard Operating Procedures Manual, Volume V, Ecology, Manual No. 5-21200-OPS-EE, Golden, Colorado. EG&G Rocky Flats, Inc. (Currently undergoing review).

EPA, 1987. Data Quality Objectives for Remedial Response Activities. Directive PB90-272634, March 1987.

EPA, 1990. Guidance for Data Useability in Risk Assessment. Interim Final. EPA/540/G90/DO8. Directive: 9285.7-05, October 1990.

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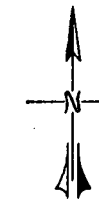
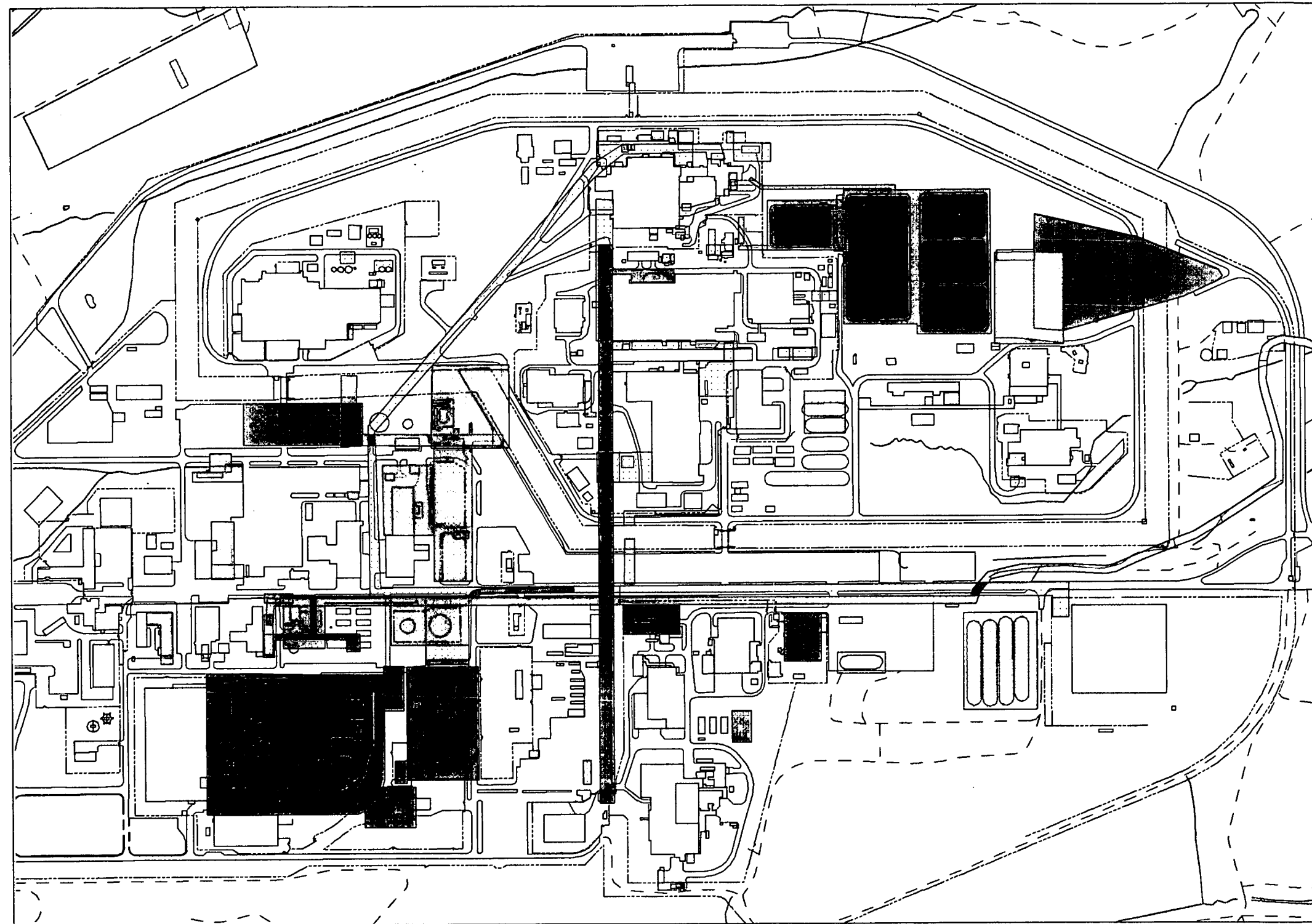
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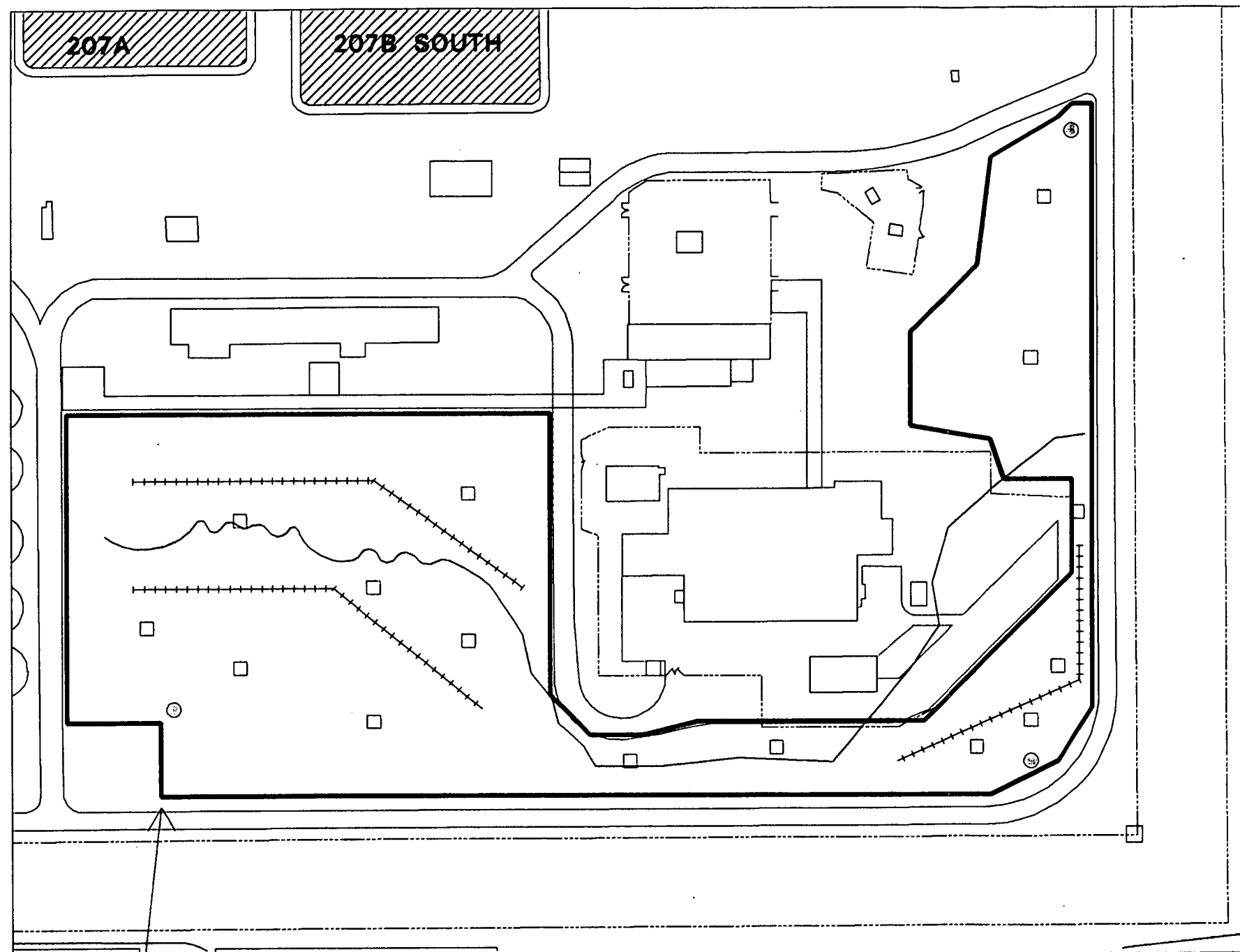


- Drainage
- Pond
- Buildings
- Fence
- Paved Road
- - - Dirt Road
- OU8
- OU9
- OU10
- OU12
- OU13
- OU14
- OU4
- OU6

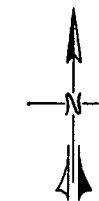
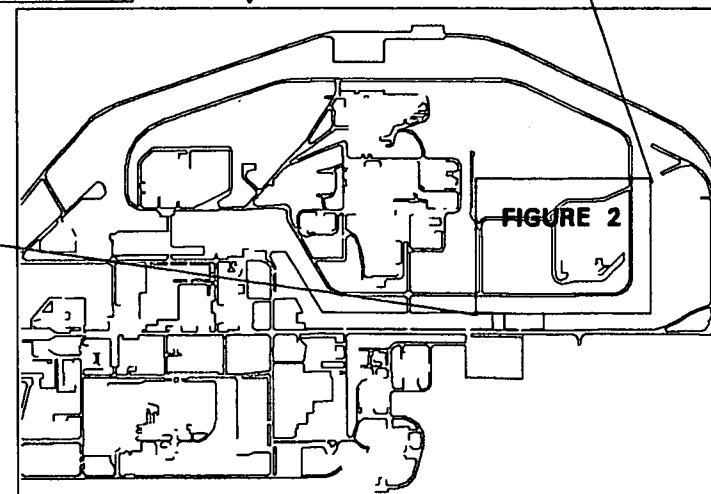
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FIGURE 1
INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
INDIVIDUAL HAZARDOUS
SUBSTANCE SITES



Location Map



- Drainage
- Buildings
- ▨ Pond
- Fence
- Paved Road

- Outline of Study Area
- Small Mammal Trap Lines
- Vegetation Plots
- Bird Observation Points

Scale: 1 inch = 150 feet

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FIGURE 2
INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
EAST DRAINAGE

Outline of Study Area

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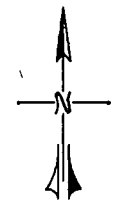
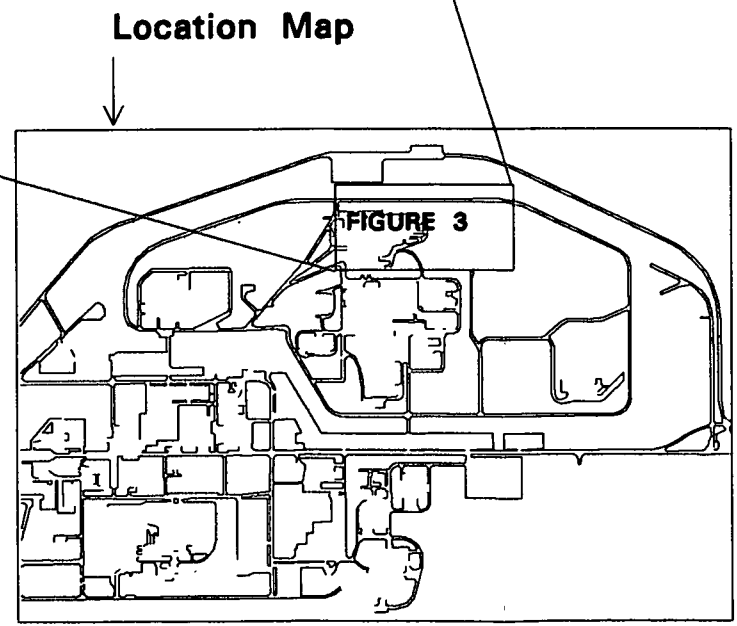
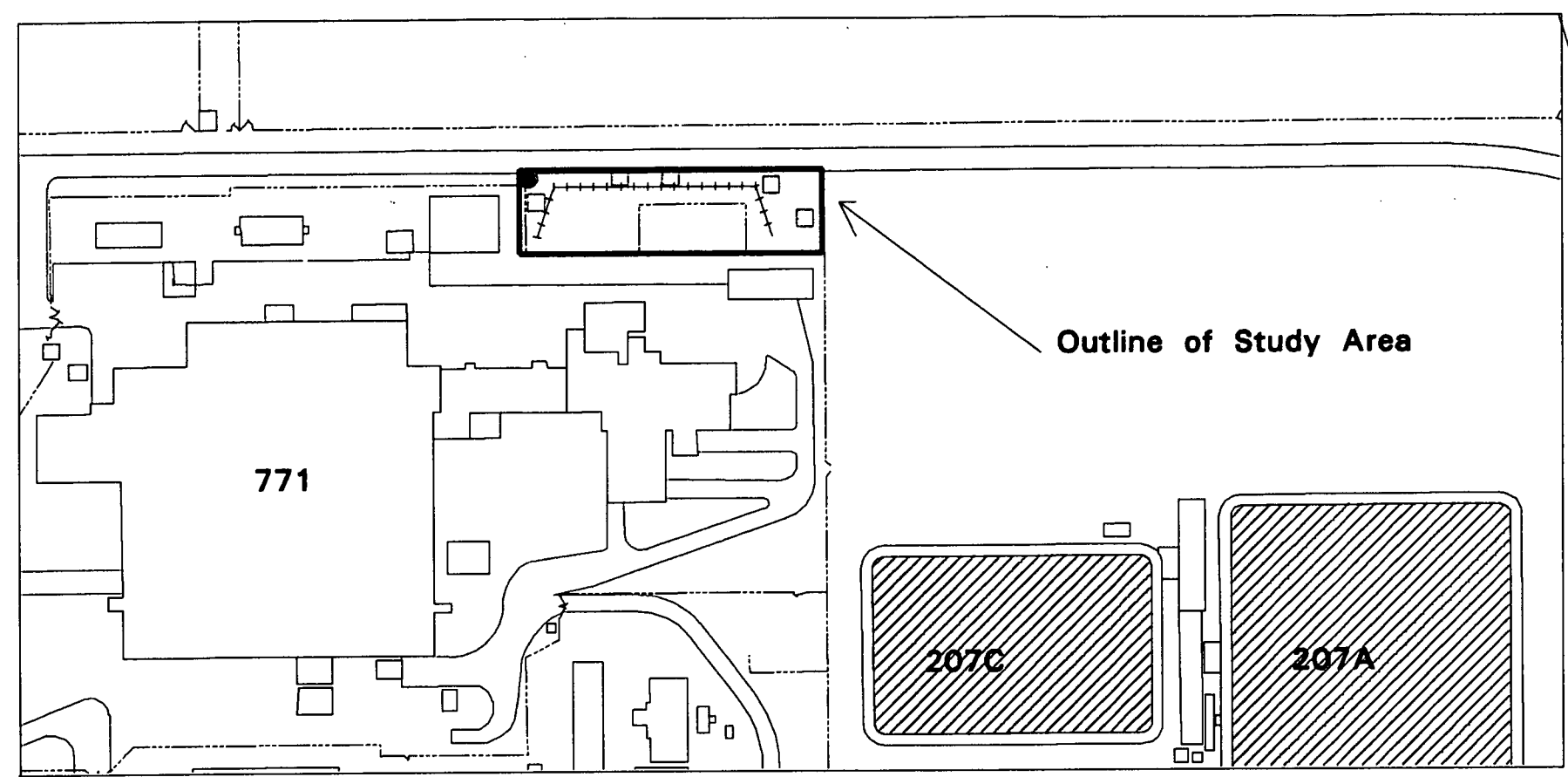
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- Pond
- Buildings
- Fence
- Paved Road

- Outline of Study Area
- Small Mammal Trap Lines
- Vegetation Plots
- Bird Observation Points

Scale: 1 inch = 150 feet

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FIGURE 3
INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
NORTH POND AND SEEP

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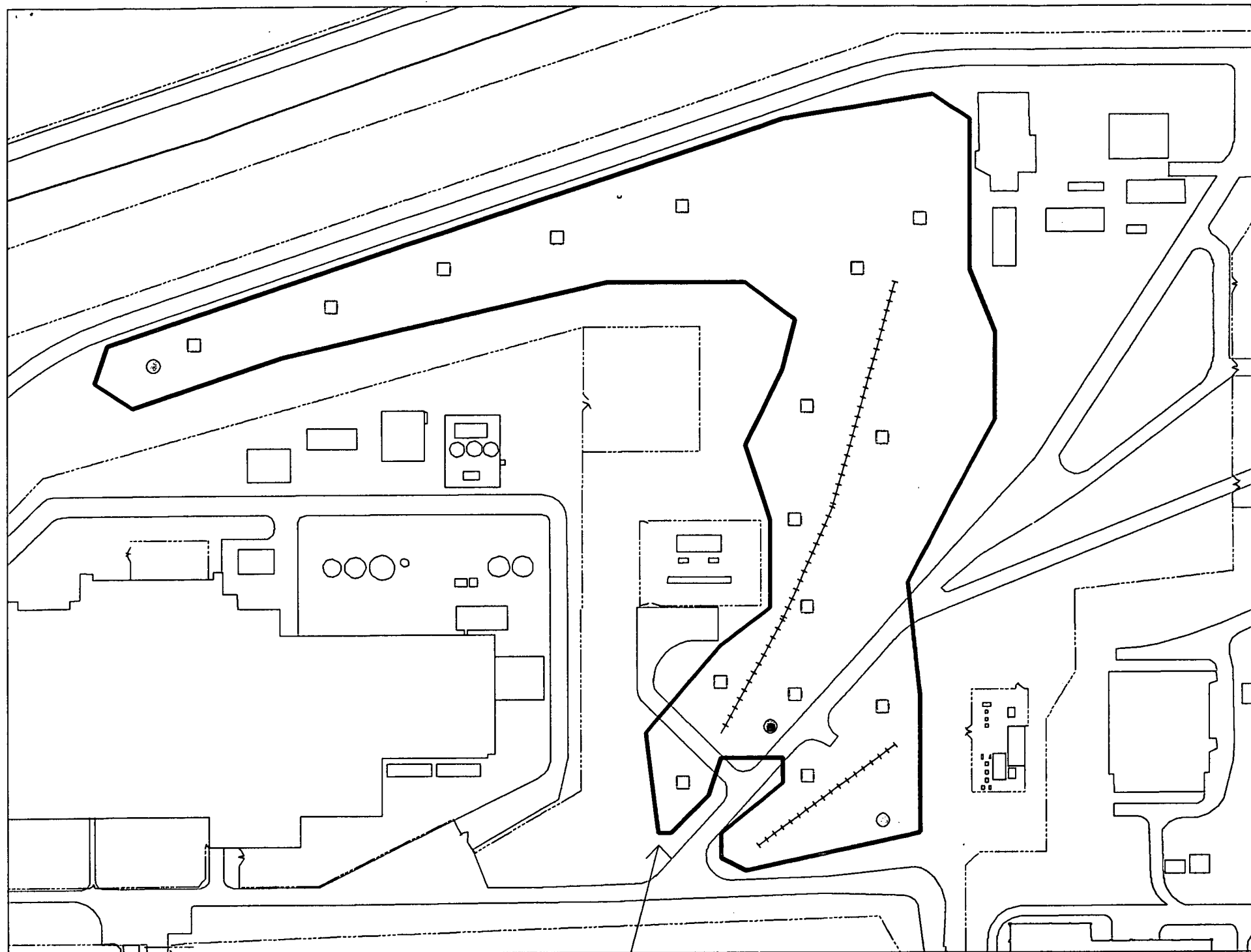
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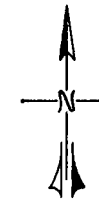
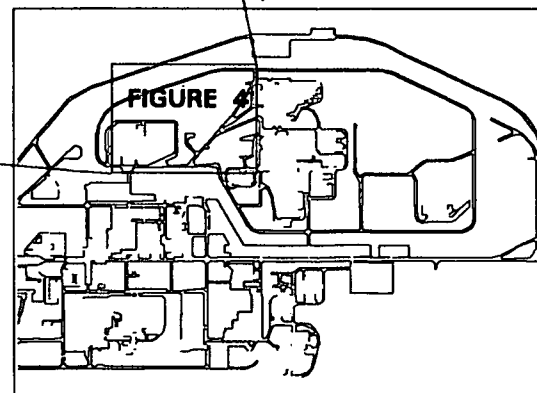
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Outline of Study Area



- Drainage
- Buildings
- Elevation
- Fence
- Paved Road

— Outline of Study Area

— Small Mammal Trap Lines

□ Vegetation Plots

○ Bird Observation Points

Scale: 1 inch = 150 feet

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FIGURE 4
INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
NORTHWEST DRAINAGE

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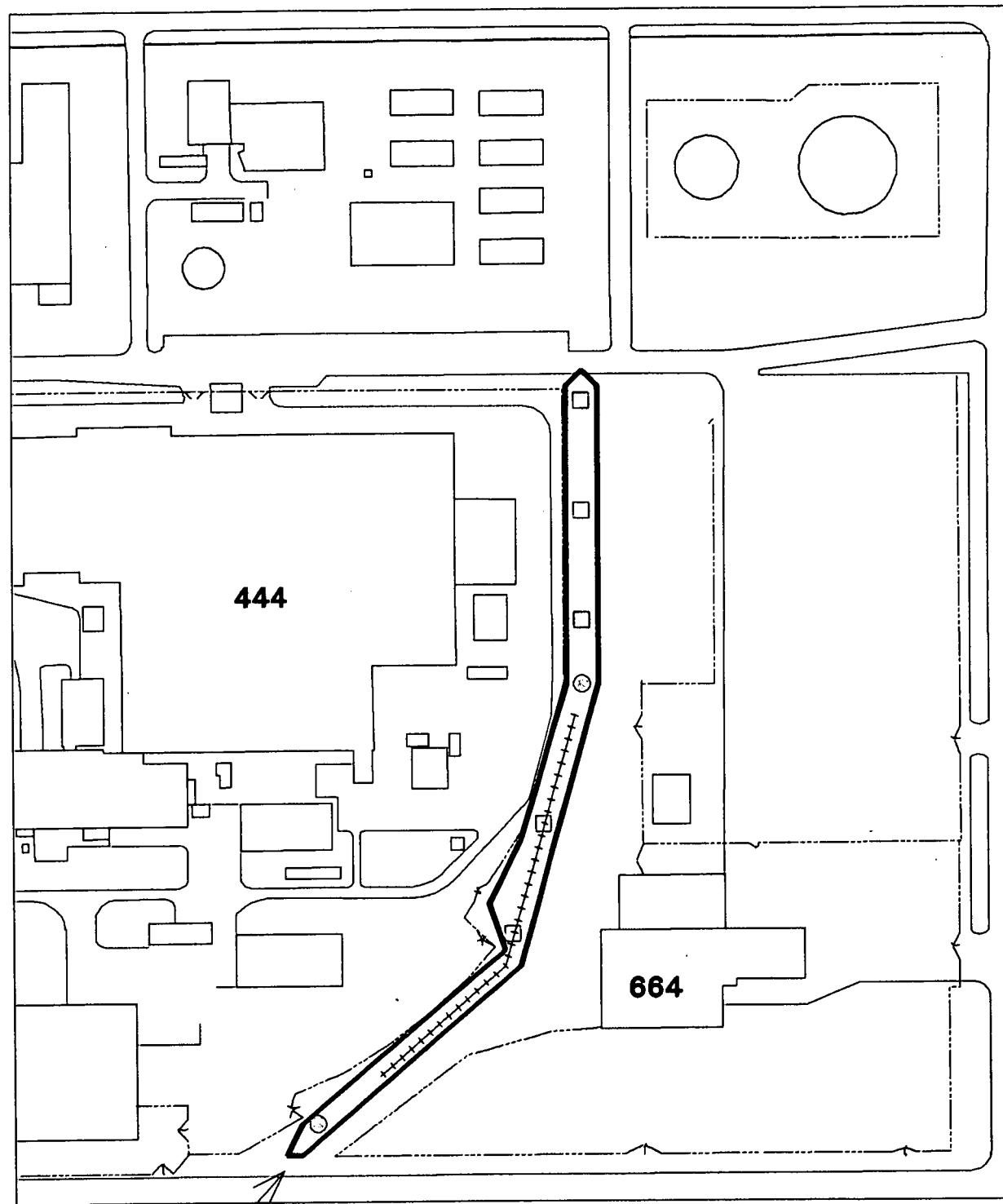
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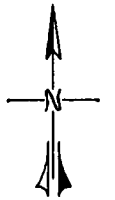
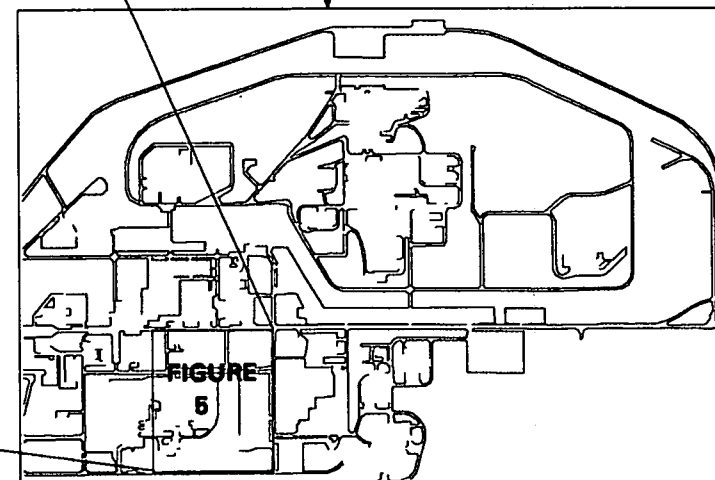
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Outline of Study Area

Location Map



- Drainage
- Buildings
- Fence
- Paved Road

— Outline of Study Area

- Small Mammal Trap Lines
- Vegetation Plots
- Bird Observation Points

Scale: 1 inch = 150 feet

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FIGURE 5
INDUSTRIAL AREA
ENVIRONMENTAL EVALUATION
WEST RAILROAD